

## WHAT IS CLAIMED IS:

1. 1. An ultrasonic intracavity probe for scanning a volumetric region from within the body comprising:
  - a handle section to be held during use of the probe; and
  - a shaft section having a distal end which is to be inserted into a body cavity during use of the probe;
  - a pivotally mounted array transducer located in the distal end of the shaft section;
  - a motor located in the handle section;
  - a drive mechanism coupled to the motor and the array transducer which acts to move the array transducer during scanning; and
  - a liquid bath located in the distal end of the shaft, a portion of which is located between the array transducer and the distal end of the shaft during scanning,wherein the center of gravity of the probe is located in the handle section.
2. The ultrasonic intracavity probe of Claim 1, further comprising a transducer mount assembly located in the distal end of the shaft section, the array transducer being pivotally mounted to the transducer mount assembly,
  - wherein the liquid bath is located within the transducer mount assembly.
3. The ultrasonic intracavity probe of Claim 2, wherein the transducer mount assembly has a proximal termination within three inches of the distal end of the shaft section,

wherein 75% of the liquid bath is contained within the transducer mount assembly.

4. The ultrasonic intracavity probe of Claim 3, wherein the transducer mount assembly has a proximal termination within one and one-half inches of the distal end of the shaft section.

5. The ultrasonic intracavity probe of Claim 4, wherein 90% of the liquid bath is contained within the transducer mount assembly.

6. The ultrasonic intracavity probe of Claim 1, wherein the liquid bath has a volume of less than 25 cc of liquid.

7. The ultrasonic intracavity probe of Claim 6, wherein the liquid bath has a volume of less than 10 cc of liquid.

8. The ultrasonic intracavity probe of Claim 7, wherein the liquid bath has a volume of approximately 6 cc of liquid.

9. The ultrasonic intracavity probe of Claim 1, wherein 90% of the liquid bath is located in the most distal 25% of the length of the shaft section.

10. The ultrasonic intracavity probe of Claim 9, wherein the liquid bath has a volume of less than 10 cc of liquid.

11. The ultrasonic intracavity probe of Claim 1, further comprising a transducer mount assembly having a main body and located in the distal end of

the shaft section, the array transducer being  
pivotally mounted to the transducer mount assembly,  
the main body of the transducer mount assembly being  
formed of a material which is lighter than stainless  
5 steel.

12. The ultrasonic intracavity probe of Claim  
11, wherein the array transducer is pivotally mounted  
to the transducer mount assembly by a transducer  
10 cradle,

wherein the transducer cradle is made of a  
material which is lighter than stainless steel.

13. The ultrasonic intracavity probe of Claim  
15 12, wherein the transducer cradle includes a solid  
body located behind the array transducer which  
displaces volume in the transducer mount assembly  
that would otherwise be occupied by liquid.

20 14. The ultrasonic intracavity probe of Claim  
12, wherein the transducer cradle is tapered so as to  
pass more easily through the liquid bath.

15. The ultrasonic intracavity probe of Claim  
25 11, wherein the transducer mount assembly includes  
wear surfaces which made of stainless steel.

16. The ultrasonic intracavity probe of Claim  
15, wherein the wear surfaces are part of the drive  
30 mechanism.

17. The ultrasonic intracavity probe of Claim  
11, wherein the weight of the probe is less than 400  
grams.

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18. The ultrasonic intracavity probe of Claim 17, wherein the weight of the probe is less than 300 grams.

5           19. The ultrasonic intracavity probe of Claim 18, wherein the weight of the probe is approximately 250 grams.

10           20. The ultrasonic intracavity probe of Claim 18, wherein the only components of the shaft which are made of a material at least equal to the density of stainless steel are components of the drive mechanism.